

Electro-Voice®
a gulton company

Model B-1150M/B-2150M Two-Way Bass Speaker Systems

SPECIFICATIONS

Useable Frequency Response:
40-5,000 Hz

Half-Space Reference Efficiency,
B-1150M: 6.2%
B-2150M: 12.4%

Long-Term Average Power Handling
Capacity Per EIA Standard RS-426-A
(See Power Handling Capacity section),

B-1150M: 200 watts
B-2150M: 400 watts

Maximum Woofer Acoustic Output,
B-1150M: 12.4 watts
B-2150M: 49.6 watts

Sound Pressure Level at 1 Meter,
1 Watt Input, Anechoic Environment,
Band-Limited Pink Noise Signal,

B-1150M: 103 dB
B-2150M: 105 dB

Distortion, 0.1 Full Power Input

Second Harmonic, 100 Hz:
B-1150M: 1.5%
B-2150M: 5.0%

Second Harmonic, 1,000 Hz:
B-1150M: 3.0%
B-2150M: 3.0%

Third Harmonic, 100 Hz:
B-1150M: 1.5%
B-2150M: <1.0%

Third Harmonic, 1,000 Hz:
B-1150M: <1.0%
B-2150M: 1.0%

Distortion, 0.01 Full Power Input

Second Harmonic, 100 Hz:
B-1150M: <1.0%
B-2150M: 2.0%

Second Harmonic, 1,000 Hz:

B-1150M: <1.0%
B-2150M: <1.0%

Third Harmonic, 100 Hz:

B-1150M: <1.0%
B-2150M: <1.0%

Third Harmonic, 1,000 Hz:

B-1150M: <1.0%
B-2150M: <1.0%

Transducer Complement,
High Frequency:
Vented Midrange

Low Frequency:
B-1150M: 1 - EVM-15L
B-2150M: 2 - EVM-15L

Box Tuning Frequency:
44 Hz

Crossover Frequency:
600 Hz

Impedance,

Nominal:
B-1150M: 8 ohms
B-2150M: 4 ohms

Minimum:
B-1150M: 5.3 ohms
B-2150M: 2.9 ohms

Input Connections:

Parallel 1/4-in. phone jacks
(allows paralleling of multiple speakers)

Enclosure Materials and Colors:
Black carpet covered Road-Wood™

Dimensions,

B-1150:
Height: 72.9 cm (28.7 in.)
Width: 61.9 cm (24.4 in.)
Depth: 35.1 cm (13.8 in.)

B-2150:
Height: 90.2 cm (35.5 in.)
Width: 71.1 cm (28.0 in.)
Depth: 49.2 cm (19.4 in.)

Net Weight,

B-1150M: 45.0 kg (99 lb)
B-2150M: 62.3 kg (137 lb)

Shipping Weight,

B-1150M: 47.7 kg (105 lb)
B-2150M: 66.8 kg (147 lb)

DESCRIPTION

The Electro-Voice Model B-1150M and B-2150M are a fresh new approach to bass guitar speaker design. Bass speakers have been evolving from the traditional "dull" bass guitar sound to the wider range high fidelity bass sound. Electro-Voice has taken this process one step further by adding our exclusive vented midrange cone speaker (VMR®), enabling the performer to achieve a full, powerful sound with clarity and articulation that simply is not available from standard bass speaker designs.

The enclosure is constructed of Road-Wood™ — a structural material made of layered and selectively oriented hardwood stands. The covering is abuse-resistant black carpeting.

The VMR features a 6-inch cone coupled to a massive 16-lb magnetic structure — the same size we use for our larger woofers — to cover the range of frequencies, 600 Hz and above. This EV innovation represents a unique way of providing high acoustic output and efficiency from a compact direct-radiator form of loudspeaker. In addition, greater dispersion is obtained at the high end which offers listeners off axis of the speaker system, the same brilliant sound and clarity as on axis. The VMR gives the musician a new freedom in exploring creative percussive bass sound.

The low frequency section was specifically designed for the bass guitar utilizing the EVM-15L 15-inch musical instrument loudspeaker. Using Thiele/Small parameters performance was optimized for maximum efficiency down to 40 Hz and minimum

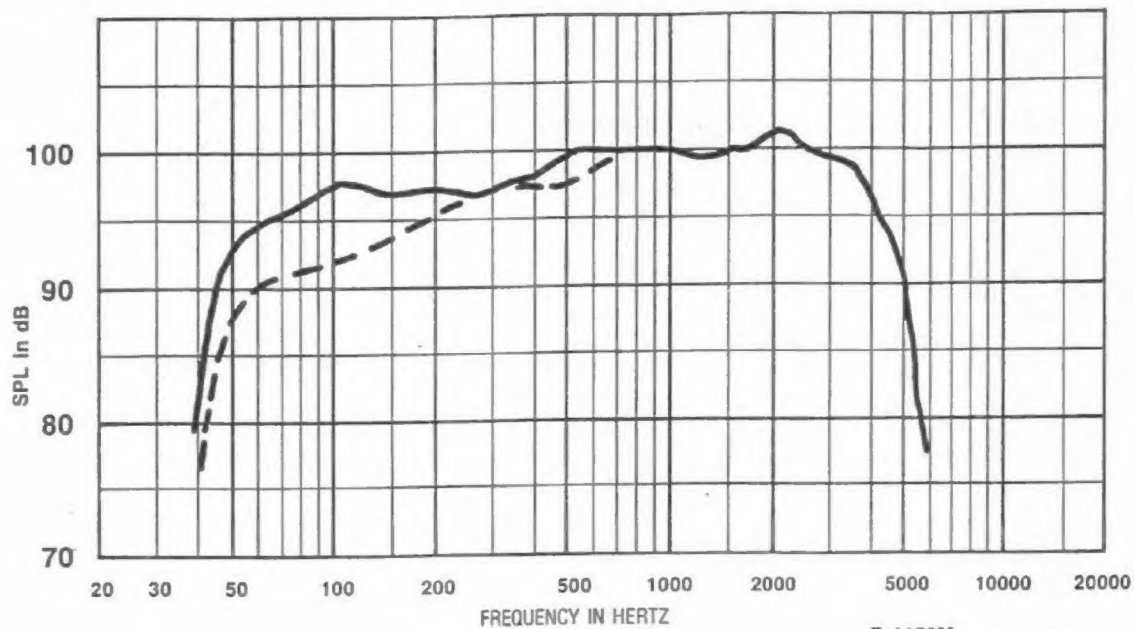


FIGURE 1
B-1150M/B-2150M Frequency Response
4 Volts at 10 Feet
(Swept $\frac{1}{3}$ -Octave Band Pink Noise,
Half-Space Environment)

B-1150M ———
 B-2150M ———

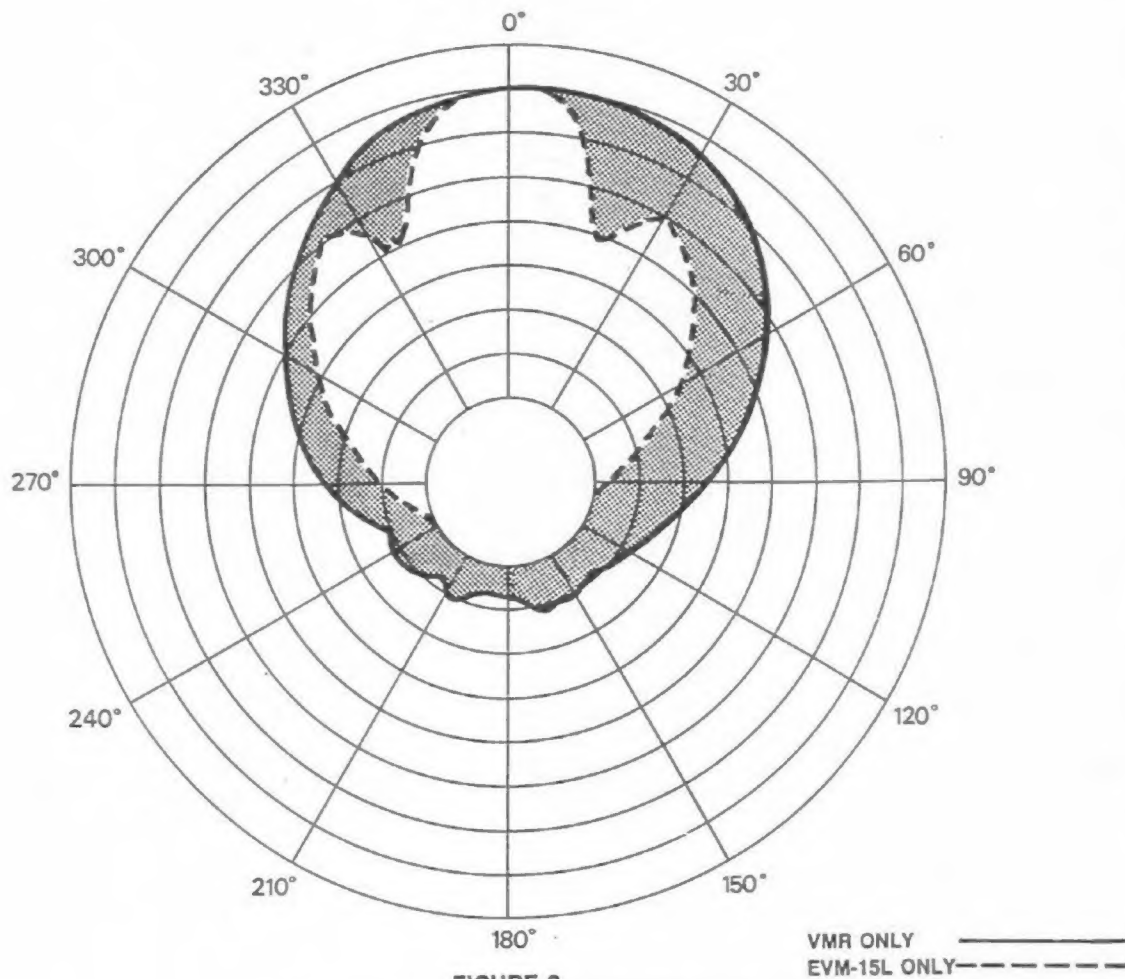


FIGURE 2
B-1150M Polar Response in Horizontal Plane
EVM-15L vs. VMR at 4 kHz
(5 dB per Division)

VMR ONLY ———
 EVM-15L ONLY ———

speaker diaphragm excursion at the lowest bass tones. This allows you to obtain maximum acoustic output without the speaker bottoming under any normal playing conditions.

The B-1150M is a two-way system containing one EVM-15L low frequency speaker and one VMR in a 4-cubic-foot enclosure. The B-2150M is also a two-way system, but with two EVM-15L speakers and one VMR in an 8-cubic-foot enclosure.

ENCLOSURE CONSTRUCTION

The B-1150M and B-2150M enclosures utilize a structural material that combines the strength of high-quality plywood with the density and acoustic damping of particle board without brittleness. Road-Wood uses the same principle of crossbanding veneers, as in plywood, in order to achieve its very high rigidity. A tough liquid-phenolic resin is blended with long, narrow strands of hardwood. Alternate layers are perpendicularly bonded under intense heat and pressure to form panels of superior uniformity. Unlike many grades of plywood, Road-Wood is dimensionally stable, water resistant and free from voids.

A combination of dado cut joints, tough adhesives and proper bracing ensure a sonically dead enclosure free from panel resonances.

The densely-woven, industrial-grade, abuse-resistant carpeting provides a finish that is both attractive and highly durable. Large, heavy-duty metal corner protectors, firmly secured rubber feet and recessed handles complete the picture and ensure that the B-1150M and B-2150M speaker systems are ideally suited to a long and reliable life "on the road." In addition the B-2150M enclosure is equipped with heavy-duty castors.

APPLICATIONS

The B-1150M and B-2150M are speaker systems designed for the bass guitarist. The B-1150M has a "lighter" sound preferred by many jazz bass players. It is also ideal for studio use. In addition, B-1150M's may be stacked in multiples for sufficient output to cover larger rooms and still retain the "light" sound.

The B-2150M has a "heavier" sound preferred by many rock bass players. The B-2150M may be used upright or laid down on its side. When placed horizontally, both EVM-15L's couple closely to the floor, providing an even "heavier" sound quality.

FREQUENCY RESPONSE

The combination of 15-inch woofer and vented midrange provide the wide and smooth overall response shown in Figure 1 for both the B-1150M and the B-2150M. The response was measured at 10 feet using a swept 1/3-octave input of 4-volts; no external equalization was used.

DIRECTIVITY

The advantage of using the VMR is shown dramatically in the polar response curves of Figure 2. The curves of the B-1150M at 4 kHz are shown with the EVM-15L only and the VMR only. The more narrow curve is that of the EVM-15L which shows that at a frequency of 4 kHz the EVM-15L is becoming very directional. This same effect holds true for other high frequencies as well. Such a response is quite typical for 15-inch speakers in general because the larger the diameter of the speaker, the more directional the response is at higher frequencies. Although a 10- or 12-inch speaker would show some improvement, the same problem would still exist. This is the reason Electro-Voice adds the VMR.

The broader, more uniform curve of the VMR means that the angle of coverage is greater. This makes the brighter bass guitar sound possible and distributes this sound evenly throughout the performing area.

POWER HANDLING CAPACITY

To our knowledge, Electro-Voice was the first U.S. manufacturer to develop and publish a power test closely related to real-life conditions. First, we use a random noise input signal because it contains many frequencies simultaneously, just like real voice or instrument program. Second, our signal contains more energy at extremely high and low frequencies than typical actual program, adding an extra measure of reliability. Third, the test signal includes not only the overall "long-term average" or "continuous" level — which our ears interpret as loudness — but also short-duration peaks which are many times higher than the average, just like actual program. The long-term average level stresses the speaker thermally (heat). The instantaneous peaks test mechanical reliability (cone and diaphragm excursion). Note that the sine wave test signals sometimes used have a much less demanding peak value relative to their average level. In actual use, long-term average levels exist from several seconds on up, but we apply the long-term average for several hours, adding another extra measure of reliability.

Specifically, the B-1150M and B-2150M are designed to withstand the power test described in EIA Standard RS-426. The EIA test spectrum is applied for eight hours. To obtain the spectrum, the output of a white noise generator (white noise is a particular type of random noise with equal energy per bandwidth in Hz) is fed to a shaping filter with 6-dB-per-octave slopes below 40 Hz and above 318 Hz. When measured with the usual constant-percentage bandwidth analyzer (one-third octave) this shaping filter produces a spectrum whose 3-dB-down points are at 100 Hz and 1,200 Hz with a 3-dB-per-octave slope below 1,200 Hz. This shaped signal is sent to the power amplifier with the continuous power set at 200 watts into the 6 ohms EIA equivalent impedance for the

B-1150M and 400 watts into the 3 ohms EIA equivalent impedance for the B-2150M (34.6 volts true RMS). Amplifier clipping sets instantaneous peaks at 9 dB above the continuous power or 1,600 watts peak for the B-1150M and 3,200 watts peak for the B-2150M (98.0 volts peak). This procedure provides a rigorous test of both thermal and mechanical failure modes.

GRILLE REMOVAL

The grille assemblies of the B-1150M and B-2150M are fastened to the enclosure using sturdy dual-lock fasteners. The grille assembly can be removed quickly and easily, allowing access to the drivers, by firmly pulling on the two black polyester ribbon loops provided.

WARRANTY (Limited)

Electro-Voice Speakers and Speaker Systems (excluding active electronics) are guaranteed for five years from date of original purchase against malfunction due to defects in workmanship and materials. If such malfunction occurs, unit will be repaired or replaced (at our option) without charge for materials or labor if delivered prepaid to the proper Electro-Voice service facility. Unit will be returned prepaid. Warranty does not extend to finish, appearance items, burned coils, or malfunction due to abuse or operation under other than specified conditions, including cone and/or coil damage resulting from improperly designed enclosures, nor does it extend to incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you. Repair by other than Electro-Voice or its authorized service agencies will void this guarantee. A list of authorized warranty service agencies is available from Electro-Voice, Inc., 600 Cecil Street, Buchanan, MI 49107 (AC/616-695-6831); Electro-Voice, Inc., 3810 148th Avenue N.E., Redmond, WA 98052 (AC/206-881-9555); and/or Electro-Voice West, 8234 Doe Avenue, Visalia, CA 93291 (AC/209-651-7777). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Service and repair address for this product: Electro-Voice, Inc., 600 Cecil Street, Buchanan, Michigan 49107.

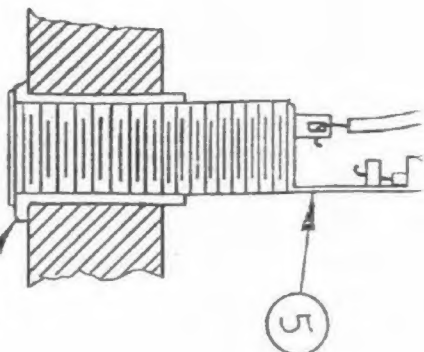
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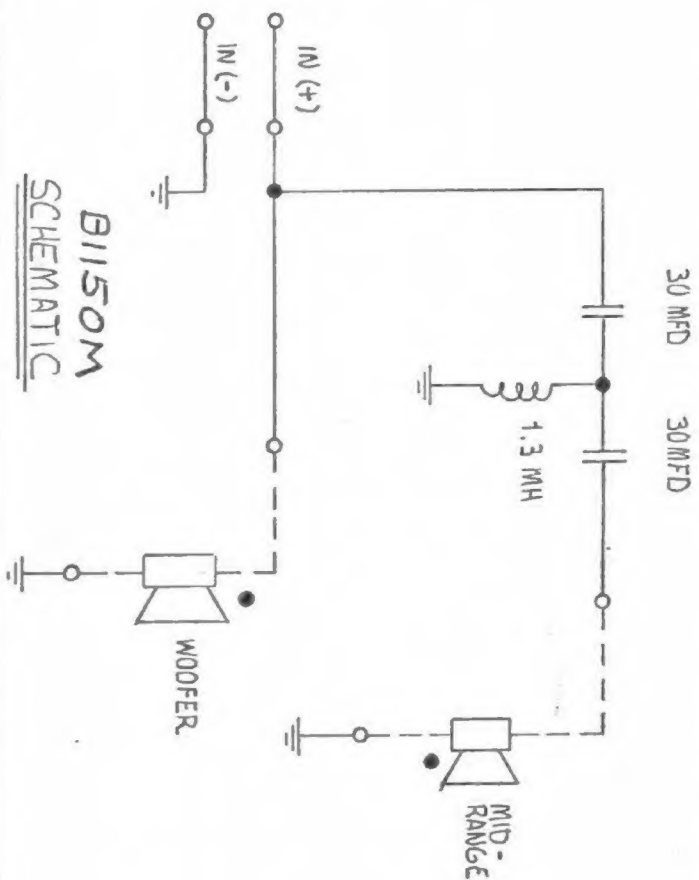
ELECTRO-VOICE, INC., 600 Cecil Street, Buchanan, Michigan 49107

MANUFACTURING PLANTS AT ■ BUCHANAN, MI ■ NEWPORT, TN ■ SEVIERVILLE, TN ■ REDMOND, WA ■ GANAQUE, ONT
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DETAIL "A"
SCALE FULL



B1150M
SCHEMATIC

Notes:

1. SECURE ITEMS 2 & 3 TO ITEM EXAMINING APPROVED ECU
2. ALL THE CONNECTIONS ARE, THE EXCEPTION OF THE LUGS (+ & -) CONNECT; THEY ARE ASSEMBLY.
3. USE LEAD WIRE FROM ITEM TERMINALS TOGETHER.
4. ITEM 15 SHOULD BE PRESSES, SHOWN & SHOULD SHOW NO N.
5. APPLY EV# 9749 TO INSIDE OF IN ITEM 1 AND INSTALL ITEM HAMMER. APPLY EV# 9749 TO INSTALL ITEMS 5 IN ITEMS 6